# CONTENTS OF VOLUME 27

## Number 1


| | | |
|---|---|---|
| A. S. Elasfouri and M. M. Hawas | 1 | A simplified model for simulating solar thermal systems |
| M. Mishra and Ashok Chandra | 11 | Absorption spectra of metal particles–dielectric layer system in the wavelength range 0.5–2.0 $\mu$m |
| Y. P. Yadav and G. N. Tiwari | 15 | Transient analysis of double-pipe heat exchanger coupled to flate-plate solar collector |
| J. Prakash and E. Carnevale | 21 | Performance prediction of two models of solar water heaters using a thermal trap |
| N. M. Nahar and Jagdish P. Gupta | 29 | Performance and testing of improved natural circulation type solar water heater in arid areas |
| H. M. Ali | 33 | Study on shallow solar pond applications at Tehran |
| H. M. Ali | 39 | Solar energy availability at Tehran: performance of different types of solar collectors |
| A. C. Agbaka | 45 | Experimental investigation of the possible correlation of wind speed on insolation |
| Y. P. Yadav and G. N. Tiwari | 49 | Analytical model of solar swimming pool: transient approach |
| S. N. Sharan, S. S. Mathur and T. C. Kandpal | 55 | Analysis of a combined photovoltaic–thermal system consisting of a linear solar concentrator and a tubular absorber |
| A. C. Anuforom, A. V. Gholap and C. E. Okeke | 61 | Variation of efficiency and short-circuit current of an array of silicon solar cells with intensity of solar radiation under tropical atmospheric conditions |
| K. Mukhopadhyay and A. O. Odukwe | 65 | An appraisal of photovoltaic power system for rural development in context of available energy resources in Nigeria |
| M. A. I. El-Shaarawi and R. A. Ramadan | 73 | Effect of condenser temperature on the performance of intermittent solar refrigerators |
| M. S. Sodha, Sant Ram, N. K. Bansal and P. K. Bansal | 83 | Effect of PVC greenhouse in increasing the biogas production in temperate cold climatic conditions |
| Yojana Katti and P. K. Bansal | 91 | Stability analysis of solar ponds with non-constant temperature gradients |

N. D. KAUSHIKA, M. S. SHARMA and SANJAY KAUL — 99 — Honeycomb roof cover system for passive solar space heating

N. S. DIXIT, N. VENKATRAMANI and V. K. ROHATGI — 103 — Measurement of temperature, electrical conductivity and ion density of seeded combustion plasmas

M. S. SHARMA and N. D. KAUSHIKA — 111 — Design and performance characteristics of honeycomb solar pond

P. C. PANDE and K. P. THANVI — 117 — Design and development of a solar cooker for maximum energy capture in stationary mode

*Software Survey Section* — I

## Number 2

Y. P. YADAV and G. N. TIWARI — 121 — Transient analytical study of box-type solar cooker

G. N. TIWARI, Y. P. YADAV and A. SRIVASTAVA — 127 — Optimization of heat loss reduction from the gas holder: analytical study

D. K. DUTT, S. N. RAI, G. N. TIWARI and Y. P. YADAV — 133 — Comparative studies of thermal performance of a roof as an inexpensive collector/storage system

D. K. DUTT, S. N. RAI, G. N. TIWARI and Y. P. YADAV — 141 — Transient analysis of a winter greenhouse

G. N. TIWARI and Y. P. YADAV — 149 — Transient analysis of conventional mud chullah

Y. P. YADAV, G. N. TIWARI and A. CHANDRA — 153 — An improved solar assisted biogas plant: a transient analysis

ICHIRO FUJIWARA, MASAHITO SATO, MASAYOSHI HIRAMATSU, YOSHIO FURUSAWA, HIROMASA SATAKE and MASAKI EBE — 159 — Equilibrium of $NH_4SCN$–$NH_3$ system for thermal energy storage

M. ALTAMUSH SIDDIQUI — 163 — Economic analysis of biogas for optimum generator temperature of four vapour absorption systems

ERIC HIRST, RICHARD GOELTZ and MARJIE HUBBARD — 171 — Determinants of electricity use for residential water heating: the Hood River conservation project

DAVE COOPER, MORT FELS and MURRAY PATTERSON — 179 — Evaluation of a wood waste burner and heat recovery system—I. Operation, thermal efficiency and particulate emissions

MORT FELS, DAVE COOPER and MURRAY PATTERSON — 185 — Evaluation of a wood waste burner and heat recovery system—II. Economics

C. D. RAKOPOULOS and E. VAZEOS — 189 — A model of the energy fluxes in a solar heated swimming pool and its experimental validation

M. N. A. Hawlader, K. C. Ng, T. T. Chandratilleke, D. Sharma and Kelvin Koay H. L. — 197 — Economic evaluation of a solar water heating system

J. Prakash and E. Carnevale — 205 — Use of thermal trap material for space heating of non-air conditioned buildings

R. S. Agarwal, A. K. Agarwal and S. M. Bin Gadhi — 211 — Performance analysis of R22 DMF turbo absorption refrigeration system

K. El-Housayni and E. Wilkins — 219 — Benefit cost analysis of gel solar ponds

R. K. Mazumder, T. C. Kandpal and S. C. Mullick — 237 — Design and optical performance analysis of seasonally adjusted discrete mirror solar concentrators

T. Kiatsiriroat, S. C. Bhattacharya and P. Wibulswas — 247 — Transient simulation of vertical solar still

M. A. R. Eisa, P. J. Diggory and F. A. Holland — 253 — Experimental studies to determine the effect of differences in absorber and condenser temperatures on the performance of a water–lithium bromide absorption cooler

M. Ishikawa, K. Kishimoto, S. Fukutomi and J. Umoto — 261 — Simulation of electrical nonuniformities in diagonal type MHD generators

*Software Survey Section* — I — CONINS: Insolation on Concentrating Collectors; ELATINS

## Number 3

Y. P. Yadav and G. N. Tiwari — 267 — Transient analysis of a winter greenhouse integrated with solar still

M. F. M. Fahmy and M. Nassar — 275 — Modeling and analysis of the dynamic behavior of hot water systems with tanks in series

S. O. Onyegegbu — 279 — Stability of thermal convection in basin-type solar stills

R. K. Mazumder, N. C. Bhowmik, M. Hussain and M. S. Huq — 285 — Solar collector operating temperatures for maximum coefficient of performance of an absorption refrigeration system

Ram Chandra and M. S. Sodha — 289 — Drying characteristics of coarse agricultural grains

G. De Beni and R. Friesen — 293 — Experimental results of a solar hot water system with spontaneous, downward, non-freezing heat transport system

R. KERN and H.-G. WAGEMANN 301 Uncomplicated measurement procedure for current–voltage characteristics of photovoltaic generators at remote sites

D. K. DUTT, S. N. RAI and G. N. TIWARI 303 Transient analysis of a shallow solar pond water heater integrated with a baffle plate

M. M. SOROUR and V. I. SEDRA 309 Evaluation and management of a solar heated application in Alexandria

Y. DEMİREL and Ş. KUNÇ 317 Thermal performance study of a solar air heater with packed flow passage

G. N. TIWARI and Y. P. YADAV 327 Comparative designs and long term performance of various designs of solar distiller

*Software Survey Section* I

## Number 4

V. K. GOEL, RAM CHANDRA and B. C. RAYCHAUDHURI 335 A study on the performance of a two-absorber reverse flat-plate collector

V. K. GOEL, RAM CHANDRA and B. C. RAYCHAUDHURI 343 Experimental investigations on single-absorber solar air heaters

S. N. SHARAN, S. S. MATHUR and T. C. KANDPAL 351 Optimum concentration ratio for an actively cooled solar concentrator–photovoltaic system with a fin-type absorber

S. N. SHARAN and T. C. KANDPAL 355 Optimum concentration ratio for a combined photovoltaic–thermal concentrator–receiver system

S. N. SHARAN, S. S. MATHUR and T. C. KANDPAL 361 Analytical performance evaluation of combined photovoltaic–thermal concentrator–receiver systems with linear absorbers

A. K. GOYAL, ASHVINI KUMAR and M. S. SODHA 367 Optimization of a hybrid solar forced-convection water heating system

M. TAKI AL-KAMIL and KHALIL K. MARZOUQ 379 Performance study of a solar water heater incorporating a bed of solid particulates

CHIH WU 385 Choice of working fluids for non-azeotropic mixed-refrigerants air conditioning systems

J. K. NAYAK 389 Transwall versus Trombe wall: relative performance studies

GOVIND, RASHMI, N. K. BANSAL and I. C. GOYAL 395 An experimental and theoretical study of a plastic film solar greenhouse

*Software Survey Section* I